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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,918	01/18/2001	Jeno Gyuris	GPCI-P02-109	8196

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EXAMINER
YU, MISOOK

ART UNIT	PAPER NUMBER
1642	16

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/764,918	GYURIS ET AL.	
	Examin r	Art Unit	
	MISOOK YU, Ph.D.	1642	

-- The MAILING DATE of this communication appears on the c ver sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52 and 54-62* is/are pending in the application.

4a) Of the above claim(s) *7,9-11,28,54-62 and 3548* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8,12-27,34 and 49-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *13* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *See Continuation Sheet* .

Continuation of Attachment(s) 6). Other: a copy of applicant's amendment filed on 7-5-02 (Paper No 7).

The Examiner of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Examiner Misook Yu.

DETAILED ACTION

Election/Restrictions

Applicant says that claims 1-52 are currently pending. However, the record of this Office indicates that claims 1-52 and 54-62 are pending. See the copy of the attached applicant's amendment (Paper No. 7, Jan. 8, 2002). Note also the Paragraph #1 of the previous Office Action mailed on 4-2-2002 (Paper No. 9).

The previous Office Action indicates that search of all of pending claims requires undue burden on the examiner, therefore the claims drawn to non-elected inventions and non-elected species were withdrawn. As stated before in the previous Office Action, the search of the claims drawn to non-elected invention and non-elected species put a serious burden on the examiner. Following is the exact copy of the previous Office Action; *The traversal is on the ground(s) that the inventions are not independent and distinct and may be examined without a serious burden because art relating to Group III should reveal art relating to the other Groups. This is not found persuasive for reasons indicated in the previous office action, as the Groups have different class/subclass, thus rendering them independent and distinct and a serious burden to search. The requirement is still deemed proper and is therefore made FINAL.*

Claims 1-6, 8, 12-27, 34, and 49-53, Species B (tyrosine kinase) are being examined as belonging to the elected Group I, while claims 7, 9-11, 28-33 and 35-48, 54-62 **remain withdrawn** from examination as being drawn to a non-elected invention and a non-elected species.

This application contains claims 7, 9-11, 28-33 and 35-48, 54-62 drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Objections

The numbering of the **new** claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Misnumbered claims 81-89 have been renumbered 54-62. Applicant thinks that it is the Office's mistake that Misnumbered claims 81-89 exists. As per applicant's request, the copy of the amendment (Paper No. 12, 7-5-02) is attached with this Office Action. Applicant is requested to look at pages 5 (there are two pages of page 5) at the amendment (Paper No. 12, 7-5-02).

Specification

The disclosure **remains objected** to because of applicant has not fixed the entire specification: The specification makes reference to amino acid sequences, for example, at Figure 5. Applicant is requested to look at the entire specification very carefully to see if there are any other sequences that require sequence listing. All nucleotide sequences with ten or more bases and all unbranched, non-D amino acid sequences with four or more amino acids, provided that there are at least 4 "specifically defined" nucleotides or amino acids embedded within the text of the disclosure must be referenced by sequence identifiers (SEQ ID NO:). The rules apply to all sequences in a given application, whether claimed or not. Correction is required. See MPEP § 2422.03.

New Grounds of Rejections

Claim Rejections - 35 USC § 112

Claims 1-6, 8, 12-27, 34, and 49-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the chimeric peptide" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the chimeric peptide" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation " the chimeric peptide " in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, 12-27, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 95/30759 (Publication date Nov. 6, 1995, IDS AB filed on July 5, 2002, Paper No. 13) as evidenced by Zetter (1998, Annu Rev Med. Vol. 49, pages 407-24, abstract only) and by Fixe et al (1998, Cytokine vol. 32-7, abstract only).

The claims are interpreted as drawn to a chimeric polypeptide comprising serum albumin with a useful heterologous peptide inserted within, wherein the chimeric polypeptide exhibits increased biological activity, wherein the heterologous peptide is derived from an angiogenesis-inhibiting proteins (claims 4 and 5), from a protein or peptide fragments that binds to trosine kinase receptor (claims 6 and 8) with various functional properties (claims 12-17), wherein the size of the heterologous peptide could be anywhere from 4 to 400 amino acids (claims 18-21), wherein the tertiary structure of the chimeric polypeptide is similar to native serum albumin (claim 22), wherein the half-life of a chimeric polypeptide is defined (claims 25-27) and wherein a pharmaceutical composition comprising the chimeric polypeptide is claimed (claim 34).

WO 95/30759 teaches a chimeric polypeptide comprising serum albumin with a useful heterologous peptide inserted anywhere within serum albumin and a pharmaceutical composition wherein the useful heterologous peptide (with various peptide lengths) could be derived from various therapeutically useful protein including an angiogenesis-inhibiting proteins (see "tumoral angiogenesis" at page 4 line 9), from a

protein or peptide fragments that binds to trosine kinase receptor with various in vivo functional properties. See abstract, page 1-5, last three lines of page 7 to line 7 of page 9, Fig. 1-6, pages 26-30, claims 1-14, 18, 25, and 26. WO 95/30759 does not teach the functional properties of the heterologous peptide. WO 95/30759 also teaches the chimeric polypeptide comprising serum albumin increases in vivo stability and have other desirable pharmacological properties. See page 1. Although WO 95/30759 does not specify the functional properties of the various therapeutically useful proteins and peptides, the functional properties of the various therapeutically useful proteins or peptides listed at pages 3 and 4, and claim 3 are inherent properties of the various therapeutically useful proteins or peptides. Fixe et al (1998, Cytokine vol. 32-7, abstract only) et al present evidence: It is well known in the art before the effective filing date of the instant application that M-CSF is a tyrosine kinase receptor, therefore the biologically active recombinant polypeptides essentially consisting of at least one active portion derived from M-CSF (see page 3 line 7 from the bottom of the page of WO 95/30759) inserted into an albumin would bind to a cell surface receptor protein (i.e., M-CSF-R), tyrosine kinase receptor (i.e., M-CSF-R), and to an extracellular domain M-CSF-R. Zetter (1998, Annu Rev Med. Vol. 49, pages 407-24, abstract only) further present evidence that angiostatin and endostatin are well known in the art as angiogenesis-inhibiting proteins useful for fighting cancer.

Thus, WO 95/30759 anticipates claims 1-6, 8, 12-27, and 34

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 95/30759 (Publication date Nov. 6, 1995, IDS AB filed on July 5, 2002, Paper No.

13) as applied to claims 1 and 23 above, and further in view of Carter et al (1994, Advances in Protein Chemistry, vol. 45, pages 153-203, IDS AE filed on July 5, 2002, Paper No. 13). The claims are drawn to a chimeric polypeptides comprising serum albumin with a heterologous peptide inserted within, wherein the heterologous peptide is inserted into a cysteine loop of the serum albumin (claims 49 and 50) or the heterologous peptide replaces a portion of a cysteine loop of a serum albumin protein (claims 51 and 52).

WO 95/30759 teaches that any therapeutically desirable peptide or polypeptide could be inserted into anywhere within serum albumin polypeptides and the resulting chimeric polypeptide is more useful as a pharmaceutical it is more stable and last longer in vivo. This property can reduce frequency of painful injections. See also the claims rejection under under 35 U.S.C. 102(b) above. WO 95/30759 does not specifically teaches inserting any therapeutically desirable peptide or polypeptide into a cysteine loop or the heterologous peptide replaces a portion of a cysteine loop of a serum albumin protein although it teaches serum albumin has extensive cysteine loops. See Fig. 1 of WO 95/30759. However, Carter et al (1994, Advances in Protein Chemistry, vol. 45, pages 153-203) teach that crystal structure of serum albumin has been solved with high resolution, which shows that serum albumin has several surface exposed cysteine loops (see page 167-173, Fig. 10 along with Table II). Carter et al further teach there are tremendous interest in scientific community to developing desirable pharmaceutical using serum albumin (see pages 194 and 195). Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to try to insert therapeutically desirable peptide biologically active peptides or polypeptides into surface exposed loop so that the biologically active peptide is exposed on surface to bind a respective receptor because the chimeric polypeptide would not be able to bind a receptor if the receptor binding therapeutically desirable peptide is buried inside serum albumin.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on July 5, 2002 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MISOOK YU, Ph.D. whose telephone number is 703-308-2454. The examiner can normally be reached on 8 A.M. to 5:30 P.M., every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony C Caputa can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Misook Yu

December 11, 2002

MARY E. MOSHER
PRIMARY EXAMINER
GROUP ~~1800~~ 1600